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10/553,454	10/17/2005	Paul H. Mcerswolke	5842.0007	6982

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CANADA

EXAMINER

WHITE, DWAYNE J

ART UNIT	PAPER NUMBER
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3745

MAIL DATE	DELIVERY MODE
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08/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

11

Interview Summary	Application No. 10/553,454	Applicant(s) MERSWOLKE ET AL.	
	Examiner Dwayne J. White	Art Unit 3745	

All participants (applicant, applicant's representative, PTO personnel):

(1) Dwayne J. White. (3) _____.

(2) Daryl Schnurr (Reg. No. 28,569). (4) _____.

Date of Interview: 06 August 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal (copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.
If Yes, brief description: _____.

Claim(s) discussed: 1, 21 and 22.


Identification of prior art discussed: FR 2,394,689.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.


EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700
8/17/07

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Discussed with Mr. Schnurr the foreign reference used in the rejections made in the Office Action dated 12 February 2007. A full translation was provided to Mr. Schnurr of the reference. Mr. Schnurr proposed arguments in regards to the rejection, however the Examiner determined that the arguments would not be sufficient to overcome the rejections made. Mr. Schnurr offered a proposed amendment and the Examiner asked for time to consider the amendment. It was determined that the amendment would still not overcome the rejection and the Examiner attempted to contact Mr. Schnurr 07 August 2007 to inform him as such. A message was left with his answering service however no reply was received to the message.

PTO 2524

CY=FR DATE=19970616 KIND=

PN=2,394,689

Device for Using Kinetic Wind Energy to Drive Electrical Generators

(Dispositif d'entraînement de générateurs électriques en utilisant l'énergie
cinétique du vent)

LOUIS JEAN COLLARD

UNITED STATES PATENT AND TRADEMARK OFFICE

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The invention relates to a device for driving electrical generators using the kinetic energy of the wind.

The invention concerns the technical sectors of production, conversion and distribution of electrical energy.

At present aerial generators that capture wind energy for producing electricity consist essentially of a guyed tower or pylon that supports a wind rotor in general, with a system for automatically orienting said rotor, and mechanically coupled by means of its axis to an electrical generator for driving it.

For this purpose the shaft of the rotor hub is connected to the generator rotor drive shaft via a multiplier gear train to ensure the angular speed of rotation necessary for said generator and that corresponds to its internal electrical characteristics.

According to the invention the speed multiplier device is eliminated and the electrical generator is driven directly at a speed that is necessary and sufficient knowing that a speed is equal to the ratio of the space covered and the time.

One can therefore see that the speed of rotation taken at the external periphery of a wind turbine is much greater than that measured at the centre of said wheel for a given wind strength.

Following a first characteristic of the invention, the free end of each blade is mounted, and notably attached so that it is free to pivot, to a toothed crown wheel meshing at its face with at least one pinion that is integral with the drive shaft of one or more electrical generators that are fixed solidly and radially to the supporting guyed tower or pylon.

These and other characteristics will emerge from the following part of the description.

For the object of the invention to be well defined, without however restricting it to the annexed drawing:

- figure 1 is a front view of a windmill with the device according to the invention.
- figure 2 is a side view that corresponds to figure 1.

- figure 3 is a partial side view showing one design that is a variant of the device in the invention.
- figure 4 is a partial front view of a design that is a variant of the device in the invention.
- figure 5 is a partial side view that corresponds to figure 4.

So as to clarify the object of the invention, we will now describe it in a non-limitative way by referring to the example shown in the figures of the drawing.

In a known way, the wind generator shown as an assembly marked A consists of /2 a wind rotor 1 secured on a horizontal shaft 2 fixed to the top of the supporting guyed tower or pylon 3.

These pylons, of known design, can for example be metal frames that are high enough to raise wheel 1 above all surrounding obstacles. Furthermore, they should be light so as to obstruct the wind as little as possible, and robust to resist all external atmospheric agents.

Wheel 1, also of known and appropriate design and being very rigid so as to resist sudden changes in the speed of the wind, may be made up of multiple helicoidally shaped blades 4 that cover the wheel almost entirely, or else blades similar to those of aircraft propellers, these blades preferably being, moreover, angled and having variable pitch.

According to the invention, the free end of each blade 4 is mounted and notably freely joined to a toothed wheel, on a toothed wheel 5, geared freely with at least one pinion 6 that is integral with the drive shaft 7 of one or more electrical generators 8 like an alternator, a dynamo, an asynchronous generator...

This or these electrical generators 8 are fixed solidly and radially to the supporting guyed tower or pylon 3.

To this end, the generators 8 can be fixed vertically or at an angle to a platform 9 that is or is not formed directly by the supporting guyed tower or pylon. This platform 9 mounted so that it can rotate freely is preferably covered so as to constitute an equipment room L, with means of access such as ladder 10 for visits to and greasing of said generators.

It must be considered, in a known way, that the upper part mounted at the end of the supporting guyed tower or pylon and fixed to platform 9 can be turned in the direction of the wind so that it operates continuously, by means in particular of a wind vane 12 or rudder placed preferably on the opposite side to the rotor 1, and perpendicularly to the pylon.

It is obvious that the lower part of the support pylon, fixed with respect to the ground, is sealed by means of a concrete block or indeed any other known means.

It will also be noted according to the invention, it is possible to drive several generators simultaneously (figure 1). Furthermore, as illustrated in figure 3, the crown wheel 5 may have teeth on both sides, for driving a larger number of /3 generators, or even surfaces that are grooved or treated in some other way to drive by friction rollers that are integral to the generator shafts. It can also be noted that the generators 8 can be fitted so that they may be tilted with respect to their mounts 11 that are fixed to platform 9 to allow their pinions 6 or rollers to be disengaged from toothed crown 5 so that they do not operate as shown by the dashed lines of figure 2. This interesting arrangement with an appropriate means of control allows some or all of the generators to be used as needed.

In another arrangement illustrated in figures 4 and 5, the crown 13 is toothed 13¹ on its outer edge to enable meshing of pinions 14 on the shafts of generators 15, that thus have their shafts placed parallel to the shaft of said crown 13. It is obvious that generators 15, that are mounted radially on and fixed to platform 9 can, as shown above, be driven by friction of their rollers on the outer surface of crown 13.

The advantages are clear from the description and in particular one can emphasize:

- simplicity of layout
- high rotation speed obtained of the drive shaft of the electrical generator(s) with no intermediate multiplying device.

The invention is not limited in any way to the (these?) methods of use nor to those designs of the various parts that have been indicated in particular; on the contrary, it encompasses all variants.

CLAIMS

/4

-1- Device for driving electrical generators by use of kinetic wind energy by means of a wind wheel mounted on a horizontal shaft fixed to the top of a supporting guyed tower or pylon with means of automatic orientation characterized by the free end of each blade being attached so that it is free to pivot, to a toothed crown wheel that meshes via its face or periphery with at least one pinion integral with the drive shaft(s) of one or more electrical generators that are fixed solidly and radially to the orientable platform of the supporting guyed tower or pylon.

-2- Device according to claim 1, characterized by the fact that its blades have variable pitch.

-3- Device according to claim 1, characterized by the fact that the electrical generator(s) are fixed perpendicularly or at an angle on the covered platform with means of access, formed directly or not by the supporting guyed tower or pylon, said platform being mounted free to rotate.

-4- Device according to claim 1, characterized by the fact that the wind rotor has an auxiliary drive motor.

-5- Device according to claim 1, characterized by the fact that as a variant the crown wheel has teeth on both surfaces.

-6- Device according to claim 1, characterized by the fact that as a variant the crown wheel is toothed on its periphery, for driving pinions integral with the generators.

-7- Device according to claim 1, characterized by the fact that as a variant the crown wheel has surfaces that are grooved or otherwise treated for driving, via friction, rollers that are integral to the shaft(s) of the generator(s).

-8- Device according to any one of claims 1, 2, 3, 4, 5 and 6 characterized by the fact that the supporting guyed tower or pylon has a fixed lower part and an orientable upper part, on which notably the electrical generators are mounted.

-9- Device according to any one of claims 1, 3, 6 and 7 characterized by the fact that the upper part mounted on the end of the supporting pylon is fixed to the /5 platform which can be oriented in the direction of the wind for continuous operation by means notable of a vane or rudder placed preferable on the opposite side to the wind rotor and perpendicularly to the pylon.

-10- Device according to any one of claims 1, 2, 3, 4, 5, 6, 7, 8 and 9 characterized by the fact that the generators are mounted in such a way that it can be tipped away with respect to their support so as to disengage their pinions or rollers from the crown.

1 Page(s) of drawings follow(s)